

REMARKS

Applicants request reconsideration of the application as amended.

Status of the Claims

Claims 1-40 are pending in the application. Claims 8, 13, and 23-28 have been withdrawn from consideration after a restriction.

Allowable Subject Matter

Claims 16-22 and 40 have been objected to “as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” (Final Office Action, page 10). Applicants wish to express appreciation to the Examiner for the indication of allowable subject matter.

Abstract

The abstract of the disclosure was objected to. According to the Examiner, the “abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 150 words.” (Office Action, page 2). In response to this objection, the abstract has been amended.

Rejection of Claims 1-4, 6 and 11-12 under 35 U.S.C. § 102(b)

Claims 1-4, 6 and 11-12 were rejected under 35 U.S.C. § 102(b) “as being anticipated by GB 2 156 592 to Kewley.” (Final Office Action, page 2). According to the Examiner, “Kewley discloses an electrically conductive elastic composite yarn comprising at least one elastic member (12) having a relaxed unit length L and a drafted length of (N x L), wherein N is in the range of about 1.0 to about 8.0 (see Figure 3), and at least one conductive covering filament (a filament of layer 18) surrounding the elastic member (see entire document including page 1, lines 15-22 and Figures 1-3).” (*Id.*, pages 2-3). The Examiner further acknowledged that “Kewley does not specifically disclose that the at least one conductive covering filament has a length that is greater than a

drafted length of the elastic member such that substantially all of the elongating stress imposed on the composite yarn is carried by the elastic member, but considering that the filaments of the conductive layer are braided while the at least one elastic member is linear, the at least one conductive covering filament has a length that is greater than a drafted length of the elastic member” (*Id.*, page 3). Applicants submit that Kewley fails to anticipate the claimed invention.

Applicants’ claim 1 recites:

An electrically conductive elastic composite yarn comprising: at least one elastic member having a relaxed unit length L and a drafted length of $(N \times L)$, wherein N is in the range of about 1.0 to about 8.0; and

at least one conductive covering filament surrounding the elastic member, the conductive covering filament having a length that is greater than the drafted length of the elastic member,

such that substantially all of an elongating stress imposed on the composite yarn is carried by the elastic member.

(emphasis added). As noted in Applicants’ Amendment and Response to the September 1, 2005 Office Action, Kewley fails to expressly anticipate this claim for at least the reason that Kewley does not disclose a composite yarn having an elastic member with a drafted length, a conductive covering filament having a length that is greater than the drafted length of an elastic member, such that substantially all of an elongating stress imposed on a composite yarn is carried by an elastic member.

Kewley also fails to inherently anticipate this claim. As stated in the MPEP, “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by possibilities or probabilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient.’” MPEP § 2112 (citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (emphasis

added). Here, no showing has been made that Kewley teaches a composite yarn having a conductive covering filament that necessarily has a length that is greater than the drafted length of an elastic member, such that substantially all of an elongating stress imposed on a composite yarn would necessarily be carried by the elastic member.

The Examiner asserts that the “Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical” and that the “burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on *prima facie* obviousness under 35 U.S.C. § 103.” (Final Office Action, page 5). However, Applicants submit that in the present case the examiner has not made a showing that Kewley discloses a product that is identical or substantially identical to Applicants’ claimed invention.

Applicants note that Kewley is primarily directed to electrically conductive components that can be incorporated into radio antennas. In this regard, Kewley was not looking to make a composite yarn having an elastic member to carry substantially all of an elongating stress. Applicants emphasize that in order to make such a yarn, several parameters must be considered. These parameters include, in addition to the relative lengths of the conductive covering filament(s) and drafted elastic member, the mechanical characteristics of the elastic member and the relative alignment of the elastic member and the conductive covering filament(s). In the present case, the disclosure of Kewley fails to even take such parameters into consideration let alone disclose any combination of such parameters that would necessarily provide for a composite fiber having an elastic member configured to carry substantially all of an elongating stress. Instead, Kewley merely discloses that filaments may be “braided” to provide a conductive layer.¹ Such disclosure fails to provide the requisite teaching necessary to make out a *prima facie* case of anticipation.

¹ Applicants note that the term “braided” has a known meaning in the art (see enclosed definition from Dictionary of Fiber and Textile Technology), and a person having skill in the art would appreciate that a fiber can be braided about an elastic member without substantially all of an elongating stress being carried by the elastic member.

Where there is no *prima facie* case of anticipation, Applicants are not required to present any evidence to rebut. The rejection should be withdrawn and the pending claims should be allowed.

Rejection of Claims 1-7, 9-12, 14-15, and 39 Under

35 U.S.C. § 103(a) Over Kolmes ‘789 in View of Andrews

Claims 1-7, 9-12, 14-15 and 39 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,777,789 to Kolmes et al. (“Kolmes ‘789”) in view of U.S. Patent No. 6,581,366 to Andrews (“Andrews”). According to the Examiner, “Kolmes ‘789 discloses that core fiber may be selected based upon the desired core properties (column 3, lines 52-58), but Kolmes ‘789 does not specifically mention the use of an elastic core member. Andrews discloses that it is known in the protective garment art to use an elastic core member because apparel can be fabricated with improved form-fitting properties and/or increased comfort (column 1, lines 18-19 and column 3, lines 8-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an elastic core member, as taught by Andrew, because the elastic core member allows for the fabrication of articles with improved form-fitting properties and/or increased comfort.” (Final Office Action, page 4). For the reasons explained below, Applicants traverse this rejection.

Applicants note, as a preliminary matter, that in order to make out a *prima facie* case of obviousness, the Examiner bears the burden of establishing three elements: “[f]irst there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference . . . must teach or suggest all the claim limitations.” (MPEP § 2142). In view of these requirements, Applicants submit that in the present case, the examiner has not made out a *prima facie* case of obviousness.

Kolmes ‘789 is directed to protective (i.e., cut resistant) garments having a substantially non-stretchable/inelastic core member, such as a nylon fiber. While providing for conductive covering filaments around a substantially non-

stretchable/inelastic core member may be relatively straightforward, Applicants' claimed invention is directed to *elastic* composite yarns having at least one elastic member. In this regard, Applicants submit that providing for "an at least one conductive covering filament surrounding the elastic member" in order to obtain an "electrically conductive elastic composite yarn" presents several technical complexities that would not be expected to be present in composite material with a substantially non-stretchable/inelastic core member. For example, in an electrically conductive elastic composite yarn one must consider relative component elongation, relative component relaxation, as well as the alignment and stability of the yarn during dynamic conditions of stretch and relaxing. The teachings of Kolmes '789 neither provide a suggestion nor a reasonable expectation of success for dealing with these complexities.

This deficiency in Kolmes '789 is not remedied by the disclosure of Andrews. Andrews relates to cut-resistant stretch yarns and contains no teaching or suggestion for incorporating a conductive covering filament into such yarns. In this regard, Applicants note that the particular covering materials disclosed in Andrews are selected for their cut-resistance or hardness and not for purposes of conductivity. Materials specifically selected for their hardness would not be expected by a person having ordinary skill in the art to have the same physical properties as materials selected for their conductivity. Because methods for successful configuration of materials in a composite yarn depend, *inter alia*, on such physical properties, a person having ordinary skill in the art would not find a suggestion or reasonable expectation of success to rely on Andrews to modify the teachings of Kolmes '789 in order to obtain Applicants' claimed invention.

In addition, the Examiner has failed to make the requisite showing that the purported combined teachings of Kolmes '789 and Andrews would provide Applicants' claimed invention. Specifically, the Examiner has failed to show that the purported combined teachings of Kolmes '789 and Andrews would necessarily result in a composite yarn having "at least one conductive covering filament surrounding the elastic member, the conductive covering filament having a length that is greater than the drafted length of the elastic member, such that substantially all of an elongating stress imposed on the composite yarn is carried by the elastic member." In this regard, neither Kolmes

‘789 nor Andrews were specifically looking to make a composite yarn having a conductive covering filament surrounding an elastic member, wherein the elastic member is configured to carry substantially all of an elongating stress. Accordingly, neither gave consideration to the parameters that must be considered in order to configure such a composite yarn (such as, *inter alia*, the mechanical characteristics of the elastic member and the relative alignment of the elastic member and the conductive covering filament(s)). Nor does either reference, taken alone or together, disclose a combination of such parameters that would necessarily provide for such a yarn. Therefore, for this additional reason, the purported combination of Kolmes ‘789 in view of Andrews fails to render the claimed invention unpatentable under 35 U.S.C. § 103(a).

Rejection of Claims 1-7, 9-12, 14-15, and 39

Under 35 U.S.C. § 103(a) Over Andrews in View of Kolmes ‘137

Claims 1-7, 9-12, 14-15, and 39 were also rejected under 35 U.S.C. § 103(a) over Andrews in view of U.S. Patent No. 5,632,137 to Kolmes et al. (“Kolmes ‘137”). According to the Examiner, “Andrews discloses that the at least covering filament is to be formed of highly cut-resistant yarns (column 3, lines 23-26), but Andrews does not appear to specifically mention metallic wire. Kolmes ‘137 discloses that it is known in the protective garment art to wrap metallic wire around a core fiber to provide the core with cut-resistance (see entire document including column 2, lines 45-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cut-resistant yarns from any suitable cut-resistant fiber material, such as metallic wire, as disclosed by Kolmes ‘137, because metallic wires provide cut-proof and/or cut resistance to the core fiber and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.” (Final Office Action, page 8).

Applicants traverse this rejection for reasons similar to those discussed above regarding the rejection based on Kolmes ‘789 in view of Andrews. Specifically, Applicants note, as acknowledged by the Examiner, that Andrews relates to the use of highly cut-resistant yarns and, as discussed above, Andrews’ teachings with regard to

incorporating such cut-resistant yarns into a composite material fail to teach or suggest methods for making elastic composite yarns with conductive covering filaments. Such failure is not remedied by the disclosure of Kolmes '137, which, as with Kolmes '789, relates to cut-resistant composite yarns having a substantially non-stretchable/inelastic core member as opposed to a composite yarn having an elastic core member.

In addition, as with the attempted combination of Kolmes '789 in view of Andrews, the purported combination of Andrews in view of Kolmes '137 fails to teach or suggest all of the recitation of Applicants' claim 1. Specifically, for at least the reasons explained above for Kolmes '789 in view of Andrews, the Examiner has failed to show that the purported combined teachings of Andrews and Kolmes '137 would necessarily result in a composite yarn having "at least one conductive covering filament surrounding the elastic member, the conductive covering filament having a length that is greater than the drafted length of the elastic member, such that substantially all of an elongating stress imposed on the composite yarn is carried by the elastic member." Accordingly, for this additional reason, the combination of Andrews in view of Kolmes '137 fails to render the claimed invention unpatentable under 35 U.S.C. § 103(a).

Conclusion

In view of the foregoing, the rejections should be withdrawn and all pending claims should be allowed.

If prosecution may be further advanced, Examiner is invited to telephone the undersigned to discuss this application.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 13221-00011-US from which the undersigned is authorized to draw.

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Enclosure

Pages from Dictionary of Fiber and Textile Technology